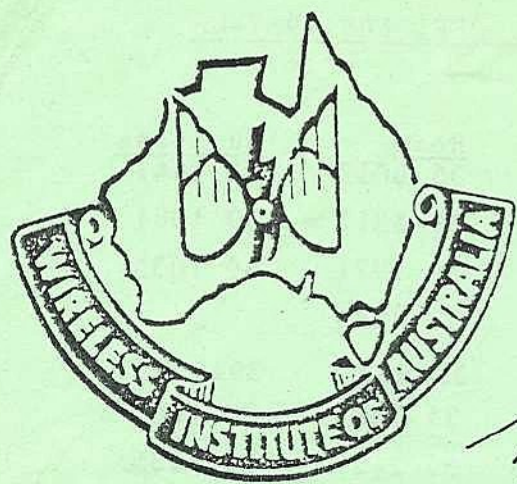
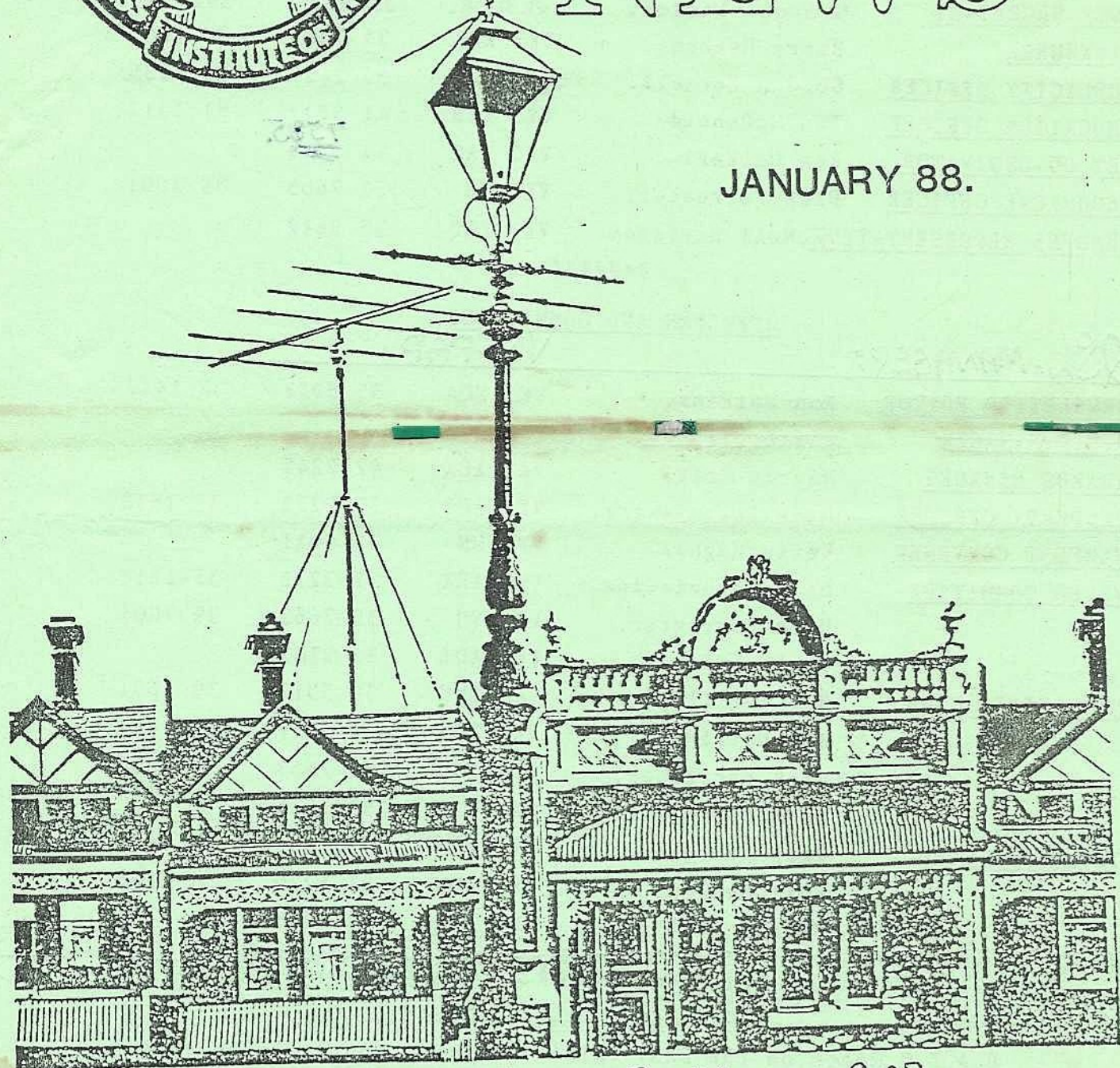


88/01 01



B.A.R.G. NEWS

JANUARY 88.



© Monthly Newsletter of the
Ballarat Amateur Radio Group

REGISTERED BY AUSTRALIA POST, PUBLICATION NO. VSH3397

88/01 02

BALLARAT AMATEUR RADIO GROUP INCORPORATED. OFFICERS 1987-88.EXECUTIVE COMMITTEE.

			<u>Home</u>	<u>Business</u>
<u>PRESIDENT</u>	Ron Watkins.	VK3 XOA	35 6017	32 1447
<u>IMM.PAST PRESIDENT</u>	Bob Terrill.	VK3 BNC	39 5317	39 1001
<u>VICE PRESIDENT</u>	John Hazledine.	VK3 CFH	39 1971	39 1035
<u>SECRETARY</u>	Jim Wright.	VK3 CFB	32 7563	
<u>ASST.SECRETARY</u>	George Fowler.	VK3DOK.	326863	391954
<u>TREASURER</u>	Harry Hekkema.	VK3 KGL	35 7563	39 1001
<u>PUBLICITY OFFICER</u>	Gordon Cornell.	VK3 PUW	39 2427	39 1135
<u>EDUCATION OFFICER</u>	Ian McDonald.	VK3 AXH	41 3717	31 1317
<u>NET CO-ORDINATOR</u>	Reg Carter.	VK3 CAZ	41 3717 7585	
<u>TECHNICAL OFFICER</u>	Dick Forrester.	VK3 VU	35 7663	39 1001
<u>MEMBERS REPRESENTATIVE</u>	Neil Davidson.	VK3 KQQ	35 9612	

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OFFICERS AND COMMITTEES.QSL.MANAGER:VK3 PAR.

<u>NEWSLETTER EDITOR</u>	Ron Watkins.	VK3 XOA	35 6017	32 1447
<u>Q.S.L.MANAGER</u>	Cliff Bilston.	VK3 CCB		
<u>AWARDS MANAGER</u>	Maurie Batt.	VK3 XEX	42 2245	
<u>PROPERTY OFFICER</u>	Dick Antoziewicz.	VK3 AEX	32 3273	31 1818
<u>HAMFEST CONVENER</u>	Kevin Hughes.	VK3 WN	35 5011	
<u>WICEN COMMITTEE</u>	Dick Antoziewicz.	VK3 AEX	32 3273	31 1818
	Dick Forrester.	VK3 VU	35 7663	39 1001
	Geoff Smith.	VK3 ADB	33 2112	
<u>NEWSLETTER COMM.</u>	Bob Terrill.	VK3 BNC	39 5317	39 1001
	Ron Watkins.	VK3 XOA	35 6017	32 1447
	Dick Forrester.	VK3 VU	35 7663	39 1001
	John Brown.	VK3 CJB	39 1014.	
<u>TECHNICAL COMM.</u>	Dick Forrester.	VK3 VU	35 7663	39 1001
	Phil Seddon.	VK3 AQM	31 5220	31 3166
	Maurie Batt.	VK3 XEX	42 2245	

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B.A.R.G.meets on the LAST FRIDAY of every month except December at the Ballarat Education Centre,Hopetoun St,Ballarat.7.30pm.

Committee meetings are held at the Education Centre on the Wednesday two weeks prior to the Club meeting at 7.30pm. Members of the Executive Committee are expected to attend and any Club Member with business for discussion is welcome.

All correspondence should be addressed to -
The Secretary,B.A.R.G.Inc,P.O.Box 216E,Ballarat East.3350.

Applications for Awards to-Maurie Batt,R.S.D.Rokewood Junction.3351.

88/01 03

MINUTES OF GENERAL MEETING HELD 27th NOVEMBER 1987.

MEETING OPENED by President Ron at 7.50pm who welcomed the 20 members in attendance and the one visitor Miss Jena Talbot.

APOLOGIES VK3 CFH, PAP, KQB, NIZ, SE.

MINUTES of previous meeting as circulated were confirmed. CAZ/XEX

CORRESPONDENCE IN Robinvale ARC. Thanks for hospitality at Hamfest. WIA re Federal Convention in April.

TREASURERS REPORT General a/c \$547.10. VS&L. \$1151.33.
Accounts passed for payment. BCEC. \$62.00. WIA membership \$49.00. AXH/WN

QSL MANAGER Moved PUW seconded DOK that Geoff PAP be appointed QSL Manager. Motion carried.

AWARDS MANAGER Maury reported no applications received in last month.

CLUB NET Co-ordinator Reg reported that in spite of bad conditions on 80mtrs the Net was going quite well but a few more participants from Club would be nice.

HAMVENTION 87 Convener Kevin circulated a report and balance sheet for Hamvention and thanked all those who assisted to make it a great success.
A minute of appreciation was moved for Kevin and carried with acclamation.

GENERAL BUSINESS Club Xmas Party to be held at Buninyong Gardens on 20th December.

Moved PUW seconded DS that Maury XEX represent Club at WIA Western Zone meeting and can offer up to \$50.00 towards power bill for 6mtr repeater in Hamilton. Motion carried.

Moved WN seconded DMK that Club participate in John Moyle contest in 1988. Motion carried.

Moved WN seconded XEX that Club purchase 70cm Cavities from Steve Gregory. Motion carried.

Moved AAI seconded DMK that in appreciation of the work done by the Ladies Auxilliary the Club donate \$100.00 towards a night out for them. Motion carried.

Moved CAZ seconded DKJ that no meeting be held in January. Motion carried.

MEETING CLOSED at 9.15pm.

Jim CFB. Secretary.

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THE NEXT MEETING OF THE BALLARAT AMATEUR RADIO GROUP WILL BE ON 26th FEBRUARY AT 7.30pm.

88/01 04

WHAT'S NEW ?

Towards the end of his very good talk on packet radio at the NOV. Meeting, Murray 3AII mentioned that there was a Repeater on Mount St Leonards. (Packet.)

How history repeats itself ! I put a repeater on that mountain in 1946 ! And on Mt Tolmie and Mt Stanley to take a microwave signal up to the Murray River then onwards to Sydney thereby allowing telephone communication between the two cities on an integrated multichannel pulse width wireless. This was no mean feat as a trail had to be blazed to each summit to allow a four wheeled room sized trailer to be dragged up and placed there. These trailers contained all the radio equipment, twin petrol generators and twin four foot diameter parabolic reflectors mounted on the roof which were alignable and gave a tight three degree beam so that establishing contact with a distant station was not easy. One dish receiving, the other transmitting, hence repeater. Strictly "line of sight" at 3000 M/c, hence the mountain tops. The amazing thing was that this equipment provided eight telephone channels, and was virtually secure and top secret. Split Magnetron oscillators and 130 odd EF50 valves consumed a deal of power although the RF output was only half a watt.

I said virtually secure. Imagine my surprise when one day going to the camp barber for a hair cut, hearing his very old console radio humming loudly for want of filter condensers AND our Top Secret conversations coming through at 89. Naturally we fitted new condensers (free!) and as we had hoped for this cured the problem, but it raised the interesting question, never solved, as to how it could receive 3000 M/c and how it could demodulate all eight channels at once and pass the audio to the speaker .. an impossibility, but it happened.

This system of pulse width modulation was developed in England and the equipment was made for and landed in Europe on D Day. Trouble was experienced and a group of factory technicians were hastily put into uniform and taken over to straighten it out, which they did, returned home and were demobilized thereby creating a record for troops in uniform for the shortest period of time. The equipment was highly successful providing secret communication there and shortly after was sent to Australia for our use in the Pacific sphere. Apart from the exercise mentioned at the start it was not used until the occupation of Japan where I was to take my Section. After five and a half years in the Aust. Army and with a family to be looked after at home I managed to give it all to my 2I.C. and he took it up.

At our H.Q. at Balcombe we were very friendly with the P.M.G. chaps at their laboratory in Coates Lane. They were working on a similar system but using pulse phase modulation instead of pulse width. After seeing the success of our system they changed over, and I believe they still use it, via the thousands of parabolic dishes all over and through Australia. Our little show on Mt St Leonards was one of the first.

3DS

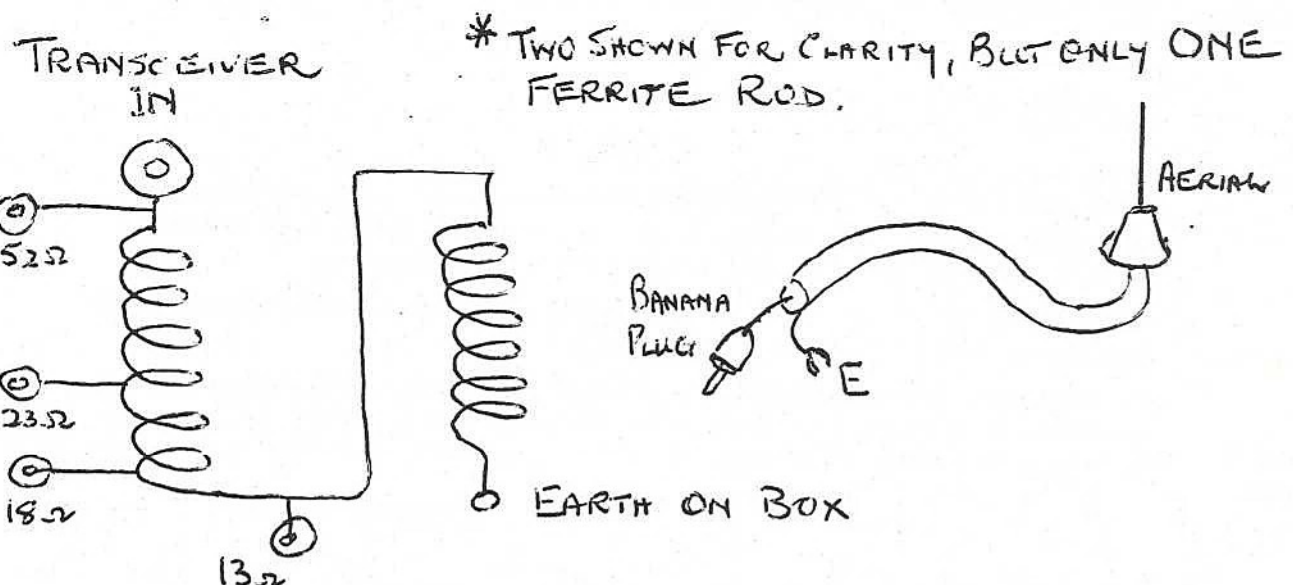
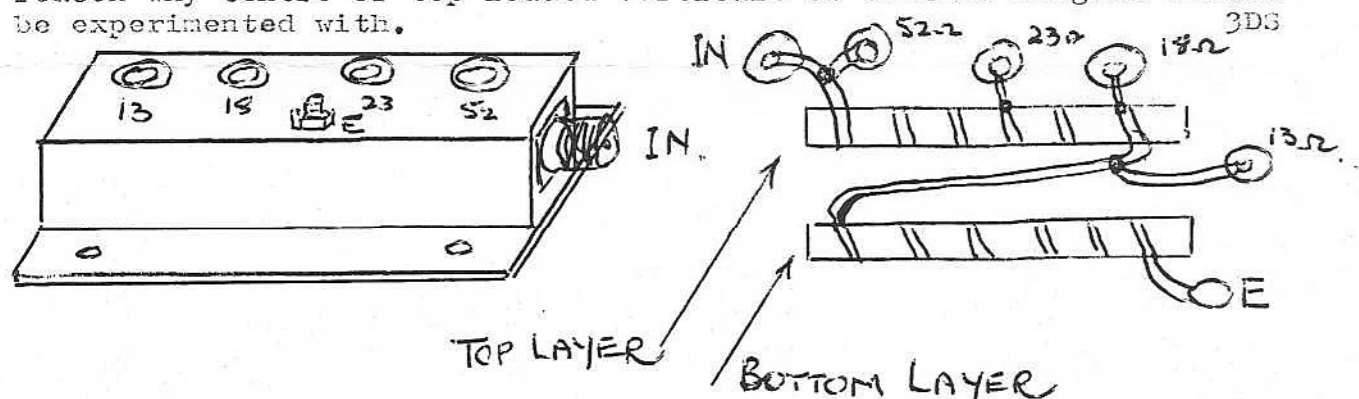
88/01 05

ALICE FOR NO TLE STRIPS

The Balun made by "Atlas" some time ago is interesting and could be easily duplicated. It consists of a 3 inch length of 3/8" diam. ferrite rod, and the windings are made with 3/16 inch wide thin copper strip. Put some insulation over the ferrite. Wind on six turns, cover with insulation then wind on another six turns .. Starting .. from the SAME end as the start of the first layer and over some more insulation. Make this insulation a bit thicker (mine is about 3/16" between layers as the strip has to double back, be insulated, then wound over.

Tappings (in copper strip) are made to the windings as shown to give impedances of 13, 18, 23 and 52 ohms, and with short connections to a row of bananaa sockets on a small two part metal case. The Antenna has about 12 inches of Co Ax cable - earthed to the bodywork aerial mounting on the car at the aerial end - earthed via a short flylead to a terminal on the square metal box which is later bolted to clean metal inside the car. The inner of the Co-AX has a banana plug attached to tap into the best impedance match; which is indicated by the best S.W.R.

The aeralis I use with this Balun are about four feet high and are helicals, on pretty thin fibreglass and have worked DXCC many times. However, armed with this good impedance matching device there is no reason why centre or top loaded verticals of various heights cannot be experimented with.



88/01 06

DX. About 10 P.M. local most evenings there is good DX on 20 M. Recently heard 9N in Nepal (Not Father Moran), and a JY in Jordan (not the King, although he was discussed). Good catches for a log.

QUERY. Has anyone heard VE3GO (Chuck) talking to an Aust. M.M. en route Cairns, call sign N4JVM, on 21284 at 1900 GMT ? If so please let me know (3DS). If in QSO pse pass my 73.

MOBILE. The new Ford Laser has'nt got a spouting wide enough to take a Yaesu mobile antenna mount. By using the two studs which hold the R.H. hatch Oleo leg, a bracket can be fashioned to pass out between the closed hatch door and the bodywork of the car. On to this is welded a short "gutter" on to which the Yaesu mount can be clamped. Works fine .. I have 7K Km of proof, hi.

ATTENUATORS. A very good short article on this subject is on page 33 of the July issue of English "Short Wave Magazine"

AERONAUTICAL RADIO . Gear, use and frequencies in use for Medium frequency communication. Direction finding and Landing systems explained. An informative series if you are interested in aircraft and radio. In three parts, middle of 1987 "Short Wave Magazine"

COMPUTER USERS

What is it all about?? -- Informal evenings to get together to exchange ideas and information, and talk over problems relative to computer usage. Generally, very informal, to help each other to obtain maximum benefit and usage from your computer.

This is to be an adjunct to the radio club and amateur radio - NOT in opposition or to the detriment.

At the next Club meeting (29th January) let's get together and plan an evening suitable to most. In the meantime collect your thoughts, ideas, questions, problems, or whatever, ready for the first evening.

Clarry VK3DMK

WESTERN ZONE

OF

VICTORIAN



DIVISION

FOUNDED 1910
INCORPORATED 1925

Reference:

SECRETARY TREASURER

K.J. SIMPSON

58 WADE ST,

PORTLAND 3305

VIC.

Phone 055 233742

MINUITS OF THE MEETING HELD 28/11/87.

PLEASE NOTE THESE MINUITS ARE UNCONFERMED.

NEXT MEETING 19/03/88 at LAKE BOLAC.

MEETING OPENED AT 1400hrs BY KEN VK3KAV WITH 8 MEMBERS IN ATTENDANCE :-
XFC; VNQ/XEH; KJH; XEX; KIT; ZGT; DTO and KAV.

APPOLOGIES FROM :- AGD; AEU; CAI; DWL; CUH; VSX; BFF; AIH.

THE MINUITS OF THE PREVIOUS MEETING WERE READ AND RECEIVED ON THE MOTION OF XEH AND KJH.
THE SECRETARY ADVISED THAT THERE WAS A TYPING ERROR IN THE DATE OF THE LAST MINUITS AND IT
SHOULD READ 22/08/87.

arising from the minuits,
secretary to add as aheading that the minuits are unconfermed.
advise the date of next meeting at the begining of the minuits.

CORRESPONDANCE

THE CORRESPONDANCE IN AND OUT WERE READ AND RECEIVED ON THE MOTION OF
KIT AND ZGT.

IN

OUT

MINUITS OF VIC DIV COUNCIL
RE ZONE GRANTS 1988
RE ADVICE OF FED CONVENTION

ZONE MINUITS AS PER USUAL LIST
TO VIC DIV. RE CHANGE OF SECRETARY/TREASURER

REPORTS

TREASURER

RECEIVED

\$1.42 AWARDS

EXPENCES

\$26.00 POSTAGE/STATIONARY

AFTER PAYMENT OF ACCOUNTS AND ALLOWING FOR BANK CHARGES TO BE DEDUCTED WHEN STATEMENT IS TO
HAND BANK BALLANCE WILL BE APROXIMATLY \$69.97 IT IS ANTISIPATED THAT UNDER THE NEW
POLLCY RE ZONE GRANTS THAT OUR FINANCES WILL BE IMPROVED IN 1988.

ON THE MOTION OF XEX AND XEH/VNQ THE ACCOUNTS WERE PASSED FOR PAYMENT.

REPETERS

KEN KAV REPORTED THAT TE PROPOSED REPETER FOR Mt BEN NEVIS HAS BEEN
APPROVED AND SHOULD BE AVAILABLE FOR ISTALATION BY MID 1988. AS YET THERE IS NO BUILDING
AVAILABLE TOHOUSE IT AND THIS COULD COST \$1000+

MT WILLIAM VHF REPETER THE 828 IS STILL TO BE INSTALED THE SETIS NOW IN THE HANDS OF
P.MILL OF VTAC. THE UHF REPETER TOWER IS STILL DAMAGED AND IS ONLY ABOUT 20 FOOT HIGH
AND IS SHELDED TO THE SOUTH. WE UNDERSTAND THAT THERE IS A REPLACEMENT REPETER AVAILABLE.

ADVICE WAS RECEIVED THAT THE 6MTR BECON HAS BEEN RELOCATED AT THE HOME OF THE OWNER
VK3OT.

ON THE MOTION OF DTO AND KIT "THAT THE ZONE APROVES OF THE OFFER OF THE BALLERAT ARC
TO PICK UP THE POWER BILL, FOR THE 6MTR BECON FOR THE NEXT TWO QUARTERS (APROX \$18 PER QTER)
UNTILL THE ZONE IS MOOR AWARE OF ITS FINANCAL STATUS.

SECRETARY TO WRITE TO BALLERAT ARC RE THIS.

88/01 08

WEEKLY ZONE NET

THE ORDER OF ROTATION FOR PARTICIPATING CLUBS OR TOWNS TO CONTROL THE WEEKLY NET TO BE THE SAME AS IN 1987.

WARRNAMBOOL	JANUARY
BALLERAT	FEBRUARY
HORSHAM	MARCH
COLAC	APRIL
PORTLAND	MAY
HAMILTON	JUNE
WARRNAMBOOL	JULY
ECT.	

IT WAS NOTED THAT THERE IS AN OFFER OF COPIES OF THE W.I.A. SUNDAY BROADCAST TAPES FOR USE IN THE ZONE NET.

IT WAS RESOLVED THAT THE NEXT MEETING BE HELD ON 19/03/88 AND A TENTATIVE DATE FOR THE A.G.M. BE SET AT 28/5/88

XEX ADVISED THAT THE BALLERAT ARC HAS RECEIVED APPROVAL FOR A DIDI -PETER FOR Mt. BUNNINYONG AND THAT THE REPETERS IN THE BALLERAT DISTRICT ARE OPERATING O.K.

THERE WAS A QUESTION ASKED RE A PROPOSED PACKET RADIO REPETER FOR THE Mt. WILLIAM SITE APPARENTLY THERE IS DISCUSSION TAKING PLACE IN MELBOURNE AND INTERSTATE OF SUCH A DEVICE BEING INSTALLED.

SECRETARY TO CHECK WITH P.MILN RE THIS MATTER.

MEETING CLOSED AT 1625hrs.

K.J.SIMPSON. SECRETARY/TREASURER

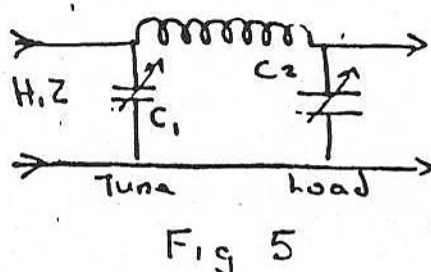
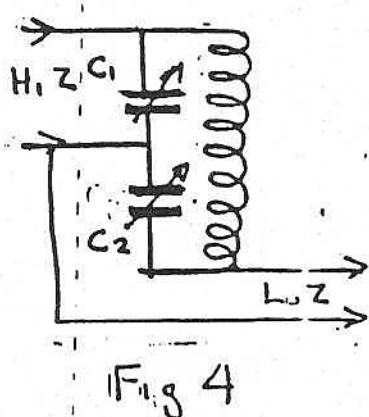
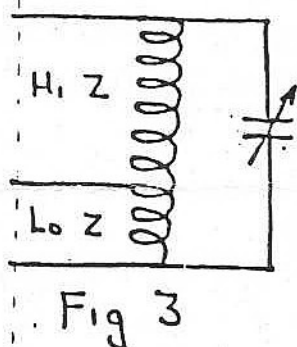
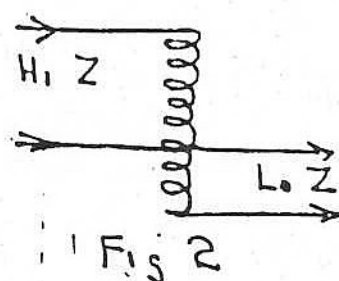
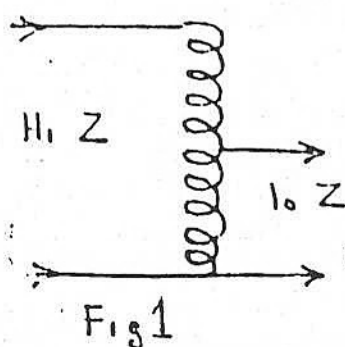
K Simpson

FOR SALE

KENWOOD "ANTENNA TUNER" \$60-00

ICOM "IC 202" 2M SSB "HANDBAG WIRELESS" \$160-00

ABOVE ITEMS CONTACT TIM VK3DIR.



Not really quite as silly a statement as it might at first appear. When you get down to the basics there is very little difference between a car gearbox and a transmitters pi coupler. That is really because they both have the same job to do. Taking the car gearbox situation first consider its function which is to match the car engine to its road wheels. The motor car engine develops its power over a range of speeds which are very much higher than the rotational speed of the wheels in such a ratio that the power developed by the engine at that speed is transferred to the road wheels with the maximum efficiency. Any driver knows that the average motor car engine does not like pulling the car along in the wrong gear. It cannot transfer its power efficiently. In exactly the same way the transmitter 'tank' circuit matches the output impedance of the Tx final stage (the engine) to the road wheels (the antenna) by means of its impedance transforming abilities.

If we consider the final stage of an audio amplifier we can visualize the use of a matching transformer to transform the high value of output impedance of the output stage devices to the low input impedance of the loudspeaker. Its the ratio of the transformer which enables this transformation to take place in exactly the same way that the selected ratio of the car gearbox matches the high speed of the engine to the road wheels and drives the car along the road at the desired speed.

88/01 10

The transformer can of course be an auto-transformer which is merely the posh name for a tapped inductor which can be used to transform impedances as shown in Fig 1.

As an alternative the common point for the input and output can be point B without changing the effect (though it will change the ratio) so the circuit now looks like Fig 2.

So far so good and if the inductor winding is correctly proportional it can be resonated to a specific frequency by means of a variable capacitor so that it presents no reactive component. (Remember that you cannot dissipate power in a reactance; you merely get it back during the next quarter cycle). So we end up with Fig 3 where we have a tuned circuit with its inductor acting as an auto-transformer to match the differing impedance and so transfer the power from the source to the load. That's OK but it means that we need a tapped inductor which is expensive to say the least.

We can avoid the cost and the problem by using two capacitors instead. If the effective value of the two capacitors in series is correct then the tuned circuit will still be resonant and present no reactive component to the source. But the ratio of the capacitors does give us, in effect, a 'tap' on the inductor. If $C_1 = C_2$ then the effective tap is at the centre of the inductor/auto-transformer.

The ratio of the auto-transformer is now proportional to the reciprocal of the reactances of C_1 , C_2 . So by juggling the ratio in opposite directions by making C_1 and C_2 variable it is possible to do two jobs at once (a) make the tuned circuit resonant at the desired frequency and (b) obtain the desired impedance transformation. If we re-draw the circuit a little as in Fig 5 we get a circuit which is much more familiar in the context of a transmitter. Lo and behold the pi output circuit.

Adjusting C_1 and C_2 will cause the circuit to act as a matching transformer between the source and the load while still permitting the whole network to act as a resonant tuned circuit.

Since the source has, usually, a very much higher impedance than the desired impedance to suit the load (typically 50-75 Ohms) it follows that in normal circumstances C_2 will be set to give a lower value of reactance (higher capacity) than C_1 .

So in general terms C_1 being of lower value will have the greatest effect in the tuning of the resonant circuit and so it is the one labelled FINE on the front panel while C_2 which is giving the 'tap down' on the inductor will have less effect on the tuning of the resonant circuit but will be more concerned with the 'load' matching effect.

58/01 11

And that of course is why it is usually marked 'load' on the front panel. So really the whole circuit is merely a transformer after all and as such does exactly what the gearbox of the car does but has the advantage of being on infinitely variable system. Its function is to transform the impedances so that the load can use it to the best advantage.

SILENT KEY

ERIC DAVID THOMAS VK3ZL

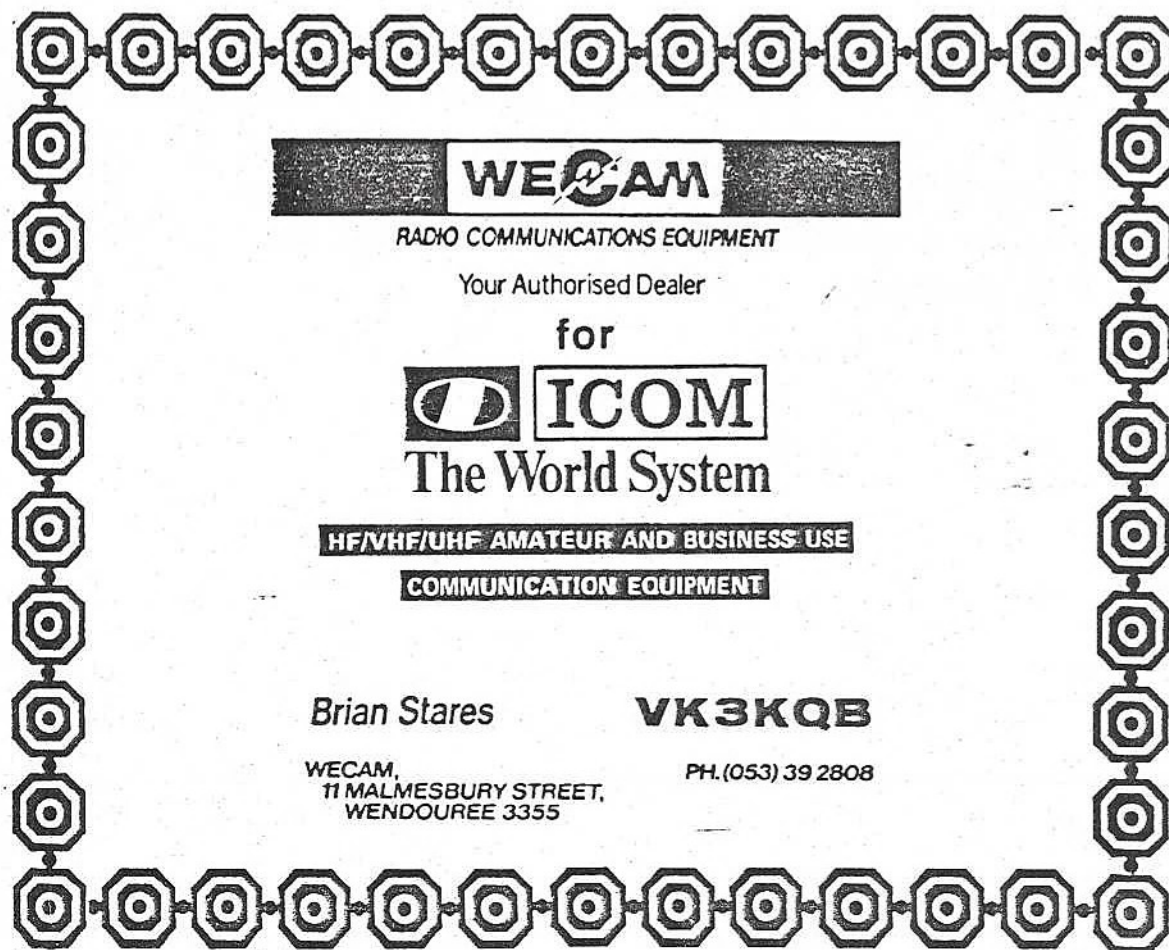
27 - 1 - 1988

It is with deep regret that we record the passing of one of Amateur Radio's early pioneers.

He was one of Nature's Gentlemen.

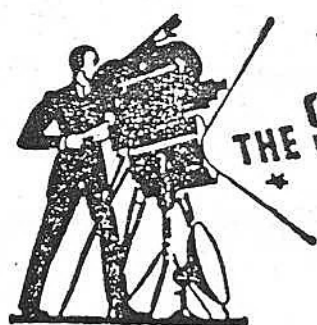
Our deepest sympathy to Val, John and family.

88/01 12



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THE SPOTLIGHT IS ON!

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